

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	SAMIDE, Gerald W. et al...	§		
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Serial No.:	10/715,067	§	Group Art Unit:	1723
		§		
Filed:	November 17, 2003	§	Examiner:	Terry K. Cecil
		§		
For:	STORM WATER	§		
	SEPARATOR SYSTEM	§		
		§		
		§		

**RESPONSE TO OFFICE ACTION DATED MARCH 3, 2006**

Mail Stop Amendments  
Commissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Att'y Docket No. 2224-00400

Date: June 5, 2006

Sir:

**INTRODUCTORY COMMENTS**

This paper is filed in response to the Office Action dated March 3, 2006. The Examiner is requested to enter the following amendment and consider the accompanying remarks. Reconsideration and allowance are respectfully requested.

**Amendments to the Specification** begin on page 2.

**Amendments to the Claims** are reflected in the listing of claims which begin on page 3 of this paper.

**Amendments to the Drawings** begin on page 6, and include the new drawing sheet attached as an appendix to this paper.

**Remarks/ Arguments** begin on page 7 of this paper.

### **Amendments to the Specification**

Please replace paragraphs [0016] and [0017] with the following amended paragraphs and add new paragraph [0017.1]:

**[0016]** Figure 7 shows a side view of the diffuser; ~~and~~

**[0017]** Figure 8 shows an orthographic view of the diffuser; ~~and~~

**[0017.1]** Figure 9 shows a cross-sectional view of a collar in use with a flow control pipe.

Please replace paragraph [0036] with the following amended paragraph:

**[0036]** Referring again to Figures 1 through 4, the mid-deck 16 features a flow control orifice 40. The flow control orifice 40 provides fluid communication between the upper chamber 18 and the lower chamber 20 and is located proximate the outlet orifice 26. The flow control orifice 40 may be defined by a flow control pipe 42 fitted into the mid-deck 16. The flow control pipe 42 extends downwards into the lower chamber 20 so as to prevent the uptake of materials that may be floating within the lower chamber 20 against the undersurface of the mid-deck 16. In one embodiment, the upper end of the flow control pipe 42 includes an inwardly extending flange having a set of bolt holes (not shown). Collars of various sizes may be attached to the inwardly extending flange using bolts, as illustrated by the cross-sectional view of a collar 99 in use with the flow control pipe 42 shown in Figure 9. The collars customize the size of the flow control orifice 40 for a particular installation.

### **Listing of Claims:**

1. (Currently amended) A separator system, comprising:  
  
a tank having a bottom and at least one sidewall, said at least one sidewall including sheet piling, said tank including a mid-deck defining an upper chamber and a lower chamber within said tank, said sidewall having an inlet orifice and an outlet orifice within said upper chamber and proximate said mid-deck; and  
  
a diffuser ~~located proximate said inlet orifice,~~ said diffuser providing fluid communication between said upper chamber and said lower chamber through said mid-deck and for diffusing fluid flow descending through the diffuser into said lower chamber, said diffuser having walls extending above said mid-deck including a front wall adjacent said inlet orifice having a cutout portion sized such that said front wall registers with said inlet orifice;  
  
wherein said mid-deck defines a flow control orifice disposed proximate said outlet orifice, said flow control orifice providing fluid communication between said upper chamber and said lower chamber.  
  
2. (Currently amended) The separator system claimed in claim 1 wherein said walls define ~~diffuser includes at least one wall defining~~ a top opening and a bottom opening, said top opening being located proximate said inlet orifice and said bottom opening being in communication with said lower chamber.  
  
3. (Currently amended) The separator system claimed in claim 2 wherein said inlet orifice has a flow direction and said diffuser further includes a plurality of vertically oriented spaced apart vanes attached to said ~~at least one wall~~ front wall and disposed parallel to said flow direction for dispersing a fluid flow moving from said top opening to said bottom opening.  
  
4. (Original) The separator system claimed in claim 3 wherein said vanes are spaced apart further at said bottom opening than at said top opening.  
  
5. (Original) The separator system claimed in claim 1 further including at least one baffle

extending upwards from said bottom within said lower chamber between said diffuser and said flow control orifice.

6. (Original) The separator system claimed in claim 1, wherein said flow control orifice is defined by an interior diameter of a flow control pipe extending from said mid-deck downwards into said lower chamber.
7. (Original) The separator system claimed in claim 6, wherein said flow control pipe includes a collar defining said interior diameter, said collar being removably attached to said flow control pipe.
8. (Original) The separator system claimed in claim 1, wherein said at least one sidewall includes four sidewalls in a rectangular formation.
9. (Original) The separator system claimed in claim 1, wherein said sheet piling includes steel sheet piling.
10. (Original) The separator system claimed in claim 9, wherein said steel sheet piling includes Z-type steel sheet piling.
11. (Original) The separator system claimed in claim 1, further including an oil extraction pipe providing fluid communication between said lower chamber and said upper chamber, said oil extraction pipe extending upwards from said mid-deck into said upper chamber.
12. (Original) The separator system claimed in claim 1, further including an inlet pipe coupled to said at least one side wall and defining said inlet orifice and an outlet pipe coupled to said at least one side wall and defining said outlet orifice, said inlet pipe and said outlet pipe being adapted for attachment to sewer pipelines.
13. (New) The separator system claimed in claim 3, wherein said walls include a back wall spaced apart from said front wall and wherein said back wall is disposed transverse to said flow direction.

14. (New) The separator system claimed in claim 13, wherein said vanes each extend perpendicularly between said front wall and said back wall.
15. (New) The separator system claimed in claim 1, wherein said inlet orifice defines a flow path and wherein said walls include a back wall spaced apart from said front wall, and wherein at least a portion of said back wall is disposed transverse to said flow path.
16. (New) The separator system claimed in claim 2, wherein at least some of said walls are flared outwards at a bottom end such that said top opening is smaller than said bottom opening, thereby diffusing fluid flow through said diffuser.
17. (New) The separator system claimed in claim 1, wherein said walls of said diffuser are substantially vertical for directing fluid flow from said inlet orifice downwards into said lower chamber.

### **Amendments to the Drawings**

New Figure 9 is added to the application. A new drawing sheet is attached hereto showing new Figure 9.

### **REMARKS/ARGUMENTS**

Applicants acknowledge receipt of the Office Action dated March 3, 2006. Claims 1-12 are pending in the application. In the Office Action, the Examiner has rejected claims 1-4, 6, 8-9, and 12 under 35 U.S.C. § 103(a) as being unpatentable over Kizhnerman et al, U.S. Patent No. 6,062,767 (“*Kizhnerman*”) in view of Gifford et al., U.S. Patent No. 2,249,818 (“*Gifford*”). The Examiner also has rejected claims 1-2, 6, 9, and 11-12 under 35 U.S.C. § 103(a) as being unpatentable over Monteith, U.S. Patent No. 5,725,760 (“*Montieth*”) in view of *Gifford*. Moreover, the Examiner has rejected claim 10 under 35 U.S.C. § 103(a) as being unpatentable over either *Kizhnerman* or *Montieth* in view of *Gifford*, as applied above, and in further view of Metzler, U.S. Patent No. 1,962,830 (“*Metzler*”). Furthermore, the Examiner has rejected claim 5 as being unpatentable over either *Kizhnerman* or *Montieth* in view of *Gifford*, as applied above, and in further view of Spencer, U.S. Patent No. 2,058,044 (“*Spencer*”). In addition, the Examiner has rejected claim 7 as being unpatentable over either *Kizhnerman* or *Montieth* in view of *Gifford*, as applied above, and in further view of Kamiyama, U.S. Patent No. 5,944,058 (“*Kamiyama*”).

Applicants have amended the claims as set out above and believe all pending claims are allowable over the art of record. Applicants therefore respectfully request reconsideration and allowance of all claims.

#### **I. Status of the Claims**

By this Response, the claims have been amended to recite certain elements of the diffuser, as shown in currently amended claim 1. Amendments have also been made to dependent claims 2 and 3, as shown above. New dependent claims 13-17 have been added to the application. Following entry of the amendments, 17 claims remain pending in the application. Applicants respectfully submit that no excess claim fees are due as a result of this amendment.

The amendments to claim 1 specify that the diffuser is for diffusing fluid flow descending through the diffuser into the lower chamber. Support for this amendment may be found in paragraphs [0029], [0032], and [0035] of the specification as originally filed. The amendments to claim 1 also

include a limitation specifying that the diffuser has walls extending the above the mid-deck, as is shown in Figures 1, 6, and 7 of the application as originally filed. The amendment also specifies that the walls include a front wall adjacent the inlet orifice having a cut-out portion sized such that the front wall registers with the inlet orifice. Support for this amendment may be found throughout the specification, and in particular, in paragraph [0032] and Figures 6 and 8 of the application as originally filed.

The amendments to claim 1 have been made to better specify the function of the diffuser in directing fluid flow from the inlet orifice down into the lower chamber. Because the walls of the diffuser extend above the mid-deck, and the front wall is adjacent the inlet orifice having a cut-out portion sized to register with the inlet orifice, flow from the inlet orifice is directed into the diffuser and down into the lower chamber. Because the walls of the diffuser are at a greater elevation than the mid-deck, the flow control orifice defined by the mid-deck near the outlet orifice functions to control the volume of storm water treated in the lower chamber. What causes storm water to flow through the lower chamber is the difference between the water level in the diffuser and the level of water at the top of the outlet flow control orifice. In order to ensure water flows through the diffuser, the diffuser is positioned at the mouth of the inlet orifice and has a cut out portion in one wall so as to register with the inlet orifice and receive fluid flow directly into the diffuser.

The amendment to claim 3 specifies that the vanes are vertically oriented. Support for this amendment may be found throughout the specification and, in particular, in Figure 6 as originally filed.

New claims 13-17 specify various features of the diffuser, including that a back wall of the diffuser spaced apart from the front wall is disposed traverse to the flow path of the inlet orifice, as depicted in Figures 7 and 8 as originally filed wherein back wall 100 is shown having a portion obscuring the flow path from the mouth of the inlet orifice.

Claims 1-17 are now pending in the application. Applicants respectfully submit that all of the amendments to the claims are supported by the specification as originally filed.



## **II. Objections to drawing under C.F.R. 1.83(a)**

The Examiner has objected to the drawings under 37 C.F.R. 1.83(a). By this Response, the Applicants have added a new Figure 9 and made corresponding amendments to the description of figures and to paragraph [0036] of the specification to make specific reference to the collar 99 shown in new Figure 9. The use of a collar that may be attached to an inwardly extending flange of the flow control pipe at its upper end was described in paragraph [0036], as originally filed. Accordingly, the new figure and the amendments to the specification add no new matter. Applicants believe that new Figure 9 and the amendments to the specification address the Examiner's objection under 37 C.F.R. 1.83(a) and are now in condition for allowance.

## **III. Rejections under 35 U.S.C. 103(a)**

The Examiner rejected claims 1-4, 6, 8-9 and 12 as being obvious over *Kizhnerman* in view of *Gifford*. *Gifford* was relied upon as teaching the use of sheet piling. Applicants respectfully traverse.

Claim 1 is an independent claim from which claims 2-4, 6, 8-9, and 12 depend. Claim 1 recites a "diffuser." In contrast, The *Kizhnerman* reference teaches a storm water receptor system that employs a float activated trap door as a means to communicate between an upper chamber and a lower chamber. Water flows down in an inclined trapped door into the lower chamber until such a time as the fluid level in the lower chamber causes the trap door to close, thereby preventing any further treatment in the lower chamber. In an alternative embodiment, the float activated trap door is replaced with a stationary ramp, as shown in Figure 3. In order to cause water to flow down the ramp and through the lower chamber for treatment, *Kizhnerman*'s design requires that the inlet pipe 42 be disposed at an elevation higher than the outlet pipe 46. In this regard, he provides a two-tiered divider having an upper tier 12 and lower tier 14.

In rendering the rejection, the Examiner equates the trap door 24 and/or ramp 28 of *Kizhnerman* with the diffuser claimed in the present application. Applicants respectfully submit that the trap door or ramp taught by *Kizhnerman* does not function to diffuse fluid flow descending into

the lower chamber, as claimed in claim 1 of the present application. Applicants respectfully submit that these features of *Kizhnerman* do not function as a “diffuser” as that term is used in the present application. Moreover, the diffuser in amended claim 1 is defined as having walls extending above the mid-deck, including a front wall adjacent the inlet orifice having a cut-out portion sized such that the front wall registers with the inlet orifice. The *Kizhnerman* reference provides no such teaching in connection with his ramp or trap door mechanism. Accordingly, the Applicants respectfully traverse the Examiner’s rejection of the present application as obvious in view of *Kizhnerman*. None of the additional references cited by the Examiner in combination with *Kizhnerman* teach or suggest a diffuser as claimed in claim 1 of the present application.

For at least the reasons noted above, claim 1 is not obvious over *Kizhnerman* in view of *Gifford* and Applicants respectfully request allowance of claim 1. Because claims 2-4, 6, 8-9, and 12 depend from independent claim 1, Applicants respectfully submit that these dependent claims are also allowable. Moreover, these claims include additional features that are not disclosed by the cited reference and are therefore allowable for this reason as well. Accordingly, the Applicants respectfully request that these rejections be withdrawn.

Claims 1-2, 6, 9 and 11-12 are rejected as being obvious over *Monteith* in view of *Gifford*. Applicants respectfully traverse.

The *Monteith* reference teaches a rain water separation tank having upper and lower chambers. *Monteith* describes a partition 22 having a first opening 36 on the inlet side. The opening 36 extends downwards as a pipe 42 that opens into the treatment compartment 26. The pipe 42 terminates at a T connection 44 with the objective of promoting circumferential movement of any liquid entering into the compartment 26 at the bottom of the pipe 42. In rejecting the claims of the present application as being obvious having regard to *Monteith* in combination with various references, the Examiner equates the opening 36 with the diffuser claimed in claim 1 of the present application. In the Applicants’ respectful submission, the opening and pipe described by *Monteith* fail to function as a diffuser to diffuse fluid flow descending into the lower chamber. *Monteith*

appears to depict a pipe of constant diameter providing no diffusing function. Moreover, the *Monteith* reference fails to disclose a diffuser having walls extending above the mid-deck including the front wall adjacent the inlet orifice having a cut-out portion sized such that the front wall registers with the inlet orifice. Accordingly, the Applicants respectfully submit that the *Monteith* reference taken alone or in combination with the other references cited by the Examiner fails to teach or suggest all the limitations in claim 1 of the present application. Therefore, Applicants respectfully request withdrawal of the obviousness rejections based on *Montieth*.

Consequently, independent claim 1 is not obvious over *Montieth* in view of *Gifford* and Applicants respectfully request allowance of claim 1. Because claims 2, 6, 9, and 11-12 depend from independent claim 1, Applicants respectfully submit that these dependent claims are also allowable. Moreover, these claims include additional features that are not disclosed by the cited reference and are therefore allowable for this reason as well. Therefore, the Applicants respectfully request withdrawal of the obviousness rejections based upon *Monteith*.

Claim 10 was rejected as being obvious over either *Kizhnerman* or *Monteith* in view of *Gifford* in further view of *Metzler*. Claim 5 was rejected as being obvious over either *Kizhnerman* or *Monteith* in view of *Gifford* and in further view of *Spencer*. Claim 7 was rejected as being obvious having regard to either *Kizhnerman* or *Monteith* in view of *Gifford* and in further view of *Kamiyama*. Thus, all of these claims were rejected as being obvious having regard to either *Kizhnerman* or *Gifford* in combination with various other references. Because the Examiner has failed to show that independent claim 1 is obvious in view of the prior art and because claims 5, 7, and 10 depend from claim 1, claims 5, 7, and 10 are allowable for the reasons set out above. Furthermore, these claims include additional features that are not disclosed by the cited references and are therefore allowable for this reason as well. Accordingly, Applicants respectfully request withdrawal of this rejection.

#### **IV. Conclusion**

Applicants respectfully request reconsideration, allowance of the pending claims and a timely Notice of Allowance be issued in this case. If the Examiner feels that a telephone conference would

expedite the resolution of this case, the Examiner is respectfully requested to contact the undersigned.

In the course of the foregoing discussions, Applicants may have at times referred to claim limitations in shorthand fashion, or may have focused on a particular claim element. This discussion should not be interpreted to mean that the other limitations can be ignored or dismissed. The claims must be viewed as a whole, and each limitation of the claims must be considered when determining the patentability of the claims. Moreover, it should be understood that there may be other distinctions between the claims and the prior art that have yet to be raised, but which may be raised in the future.

If any fees are inadvertently omitted or if any additional fees are required or have been overpaid, please appropriately charge or credit those fees to Conley Rose, P.C. Deposit Account Number 03-2769.

Respectfully submitted,



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